

Examiner also states that the difference between Fehder and claim 51 is the phase transport enhancer as part of the detector.

The Examiner attempts to cure the deficiencies of Fehder by citation of Heitzmann. The Examiner states that Heitzmann teaches a phase transport enhancer as part of a carbon dioxide detector. The Examiner also states that the phase transport enhancer of Heitzmann catalyzes the reaction between carbon dioxide and water to form carbonic acid. The Examiner concludes that it would have been obvious to employ any well known catalyst in the detector of Fehder, including the catalyst of Heitzmann.

Because it is believed that the actual teachings of these documents, taken alone or in combination, neither show or suggest the claimed invention, this ground for rejection is respectfully traversed. The following discussion demonstrates the basis for this conclusion, with the result that the Examiner's rejection may be properly withdrawn.

In contradistinction to the Examiner's argument, Heitzmann does not teach a phase transport enhancer as defined by the present claims. Instead, Heitzmann teaches that an enzyme such as carbonic anhydrase may be used as a catalyst for a carbon dioxide sensor. As the Examiner will appreciate, carbonic anhydrase is a protein molecule which catalyzes the reversible hydration of carbon dioxide to carbonic acid. The catalyst disclosed by Heitzmann is not a phase transport catalyst as defined in the present claims. Such phase transport catalysts are known to catalyze the

transfer of reagents from one liquid phase to another. Neither Fehder nor Heitzmann teach or suggest that a phase transport enhancer on a carbon dioxide detector comprising a pH-sensitive dye enhances the reaction between carbon dioxide in the gas phase and the pH-sensitive dye.

Applicants submit that the Examiner has failed to meet his burden of establishing a prima facie case of obviousness. None of the references relied upon by the Examiner teach or suggest that Applicants' phase transport enhancer would catalyze the reaction between CO₂ in the gas phase and a pH sensitive dye. In light of the arguments above, Applicants request the Examiner to withdraw the rejection under 35 U.S.C. § 103 over Fehder in view of Heitzmann.

The Examiner has rejected claims 48-50, 52, 54, and 55 under 35 U.S.C. § 103 as being unpatentable over Fehder in view of Heitzmann as applied to claims 51 and 53 and further in view of Gehring et al. The Examiner states that the differences between Fehder as modified by Heitzmann is the particular chemical specie of phase transport enhancer. The Examiner states that Gehring et al. teach the phase transport enhancer tetrabutylammonium bromide for the purpose of enhancing or catalyzing a reaction. The Examiner concludes that it would have been obvious to substitute the phase transport enhancer of Gehring et al. for the phase transport enhancer of Fehder as modified by Heitzmann (carbonic anhydrase) as a functionally equivalent substitution. Applicants respectfully traverse this basis for rejection.

As discussed above, Heitzmann teaches the use of carbonic anhydrase as a catalyst. Applicants submit that one of ordinary skill in the art would not be motivated to substitute the phase transport enhancer of Gehring et al. for the carbonic anhydrase of Heitzmann. The phase transport enhancer of Gehring et al. and the catalyst of Heitzmann are utilized for two completely different purposes. The catalyst of Heitzmann is utilized to catalyze the reaction of carbon dioxide with water to give carbonic acid. In contrast, the phase transport enhancer of Gehring et al. is utilized to catalyze alkylation reactions in liquid phase. As taught by Gehring et al.:

[t]he process (b) according to the invention can, if appropriate, also be carried out in a two-phase system, such as, for example, water/toluene or water/dichloromethane, if appropriate in the presence of a phase transfer catalyst. Examples of such catalysts which may be mentioned are: tetrabutylammonium iodide, tetrabutylammonium bromide, tributyl-methylphosphonium bromide, trimethyl-C₁₃/C₁₅-alkylammonium chloride, dibenzylammonium-methyl sulfate, dimethyl-C₁₂/C₁₄-alkylbenzylammonium chloride, tetrabutylammonium hydroxide, 15-crown-5, 18-crown-6, triethylbenzylammonium chloride, trimethylbenzylammonium chloride.

Column 19, lines 42-54, emphasis added.

Gehring et al. do not teach or suggest that a phase transport catalyst could enhance the reaction between a gas, such as carbon dioxide, in the vapor phase, and a dye absorbed on a solid phase support. Gehring et al. only teach that the phase transport enhancer is useful catalyzing a reaction containing two liquid phases. Therefore, the

combination of Fehder, Heitzmann and Gehring et al. would not give Applicants' claimed invention.

Applicants again submit that the Examiner has failed to establish a prima facie case of obviousness of the claimed invention. Therefore, this basis for rejection may be properly withdrawn.

In light of the amendments and remarks above, Applicants request the Examiner to withdraw the rejection under 35 U.S.C. § 103 over Fehder, Heitzmann and Gehring et al.

THE REJECTION UNDER 35 U.S.C. § 112, SECOND PARAGRAPH,
MAY BE PROPERLY WITHDRAWN

The Examiner has rejected claims 54 and 55 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard the invention.

In particular, the Examiner states that method claim 54 improperly derives antecedent basis from a part of the claim which defines an apparatus. The Examiner also states that since claim 54 is a method claim, it should be limited to method steps which define a method of determining the proper placement of an endotracheal intubation tube. The Examiner states that the claim is ambiguous as to whether Applicants intend to claim a method or apparatus.

Applicants note that new claim 62 corresponds to old claim 54. In contradistinction to the Examiner's statement, claim 62 does in fact recite positive method steps. In step (1), the method is directed to "inserting a device into the

trachea of the patient..." Thereafter in step (1), the claim defines the device. In step (2), the method is directed to "observing a color change of the indicator..." The rest of step (2) recites that the color change indicates the presence of CO₂ in the respiratory gas and thereby the proper placement of the endotracheal tube. Applicants submit that steps (1) and (2) clearly define method steps for the proper placement of an endotracheal intubation device. This claim is not directed to an apparatus. Therefore, Applicants submit that this basis for rejection under 35 U.S.C. § 112, second paragraph, is improper and should be withdrawn.

In light of the remarks above, Applicants request that the Examiner withdraw the rejection under 35 U.S.C. § 112, second paragraph.

Applicants submit that the application is fully in condition for allowance. Early notice to that effect is earnestly solicited.

Respectfully submitted,

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